

What is claimed is:

1. An oligonucleotide for detection of Salmonella toxin gene invA mRNA, which oligonucleotide is capable of specifically binding to Salmonella gene invA mRNA, and  
5 comprises at least 10 contiguous bases of any of the sequences listed as SEQ. ID. Nos. 1 to 12.

2. An oligonucleotide for detection of Salmonella toxin gene stn mRNA, which oligonucleotide is capable of specifically binding to Salmonella toxin gene stn mRNA,  
10 and comprises at least 10 contiguous bases of any of the sequences listed as SEQ. ID. Nos. 13 to 18.

3. A process of amplifying Salmonella gene invA mRNA, wherein a specific sequence of Salmonella gene invA mRNA present in a sample is used as a template for  
15 synthesis of a cDNA employing an RNA-dependent DNA polymerase, the RNA of the formed RNA/DNA hybrid is digested by Ribonuclease H to produce a single-stranded DNA, said single-stranded DNA is then used as a template for production of a double-stranded DNA having a promoter  
20 sequence capable of transcribing RNA comprising said specific sequence or a sequence complementary to said specific sequence employing a DNA-dependent DNA polymerase, said double-stranded DNA produces an RNA  
25 transcription product in the presence of an RNA polymerase, and said RNA transcription product is then used as a template for cDNA synthesis employing said RNA-dependent DNA polymerase, the amplification process being  
30 characterized by employing a first oligonucleotide capable of specifically binding to Salmonella gene invA mRNA and comprising at least 10 contiguous bases of any of the sequences listed as SEQ. ID. Nos. 1 to 12 and a  
second oligonucleotide comprising at least 10 contiguous  
35 bases of any of the sequences listed as SEQ. ID. Nos. 19 to 23 and having a sequence homologous to a portion of the Salmonella gene invA mRNA sequence to be amplified, where either said first or second oligonucleotide includes said RNA polymerase promoter sequence at the 5'

end.

4. A process of amplifying Salmonella gene stn mRNA, wherein a specific sequence of Salmonella gene stn mRNA present in a sample is used as a template for  
5 synthesis of a cDNA employing an RNA-dependent DNA polymerase, the RNA of the formed RNA/DNA hybrid is digested by Ribonuclease H to produce a single-stranded DNA, said single-stranded DNA is then used as a template  
10 for production of a double-stranded DNA having a promoter sequence capable of transcribing RNA comprising said specific sequence or a sequence complementary to said specific sequence employing a DNA-dependent DNA polymerase, said double-stranded DNA produces an RNA  
15 transcription product in the presence of an RNA polymerase, and said RNA transcription product is then used as a template for cDNA synthesis employing said RNA-dependent DNA polymerase, the amplification process being characterized by employing a first oligonucleotide  
20 capable of specifically binding to Salmonella gene stn mRNA and comprising at least 10 contiguous bases of any of the sequences listed as SEQ. ID. Nos. 13 to 18 and a second oligonucleotide comprising at least 10 contiguous bases of any of the sequences listed as SEQ. ID. Nos. 24 to 27 and having a sequence homologous to a portion of  
25 the Salmonella gene stn mRNA sequence to be amplified, where either said first or second oligonucleotide includes the RNA polymerase promoter sequence at the 5' end.

5. The process according to claim 3 or 4, which is  
30 a detection method, wherein said amplification process is carried out in the presence of an oligonucleotide probe capable of specifically binding to the RNA transcription product resulting from said amplification and labeled with an intercalator fluorescent pigment, and changes in  
35 the fluorescent properties of the reaction solution is measured, with the proviso that the labeled oligonucleotide has a sequence different from those of

the first oligonucleotide and the second oligonucleotide in the sequence.

5       6.    The detection method according to claim 5, characterized in that said probe is designed so as to complementarily bind to at least a portion of the sequence of said RNA transcription product, and the fluorescent property changes relative to that of a situation where a complex formation is absent.

10       7.    The detection method according to claim 6, characterized in that said probe for detecting said invA mRNA comprises at least 10 contiguous bases of SEQ. ID. No. 28 or its complementary sequence.

15       8.    The detection method according to claim 6, characterized in that said probe for detecting said stn mRNA comprises at least 10 contiguous bases of SEQ. ID. No. 29 or its complementary sequence.

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